409/8

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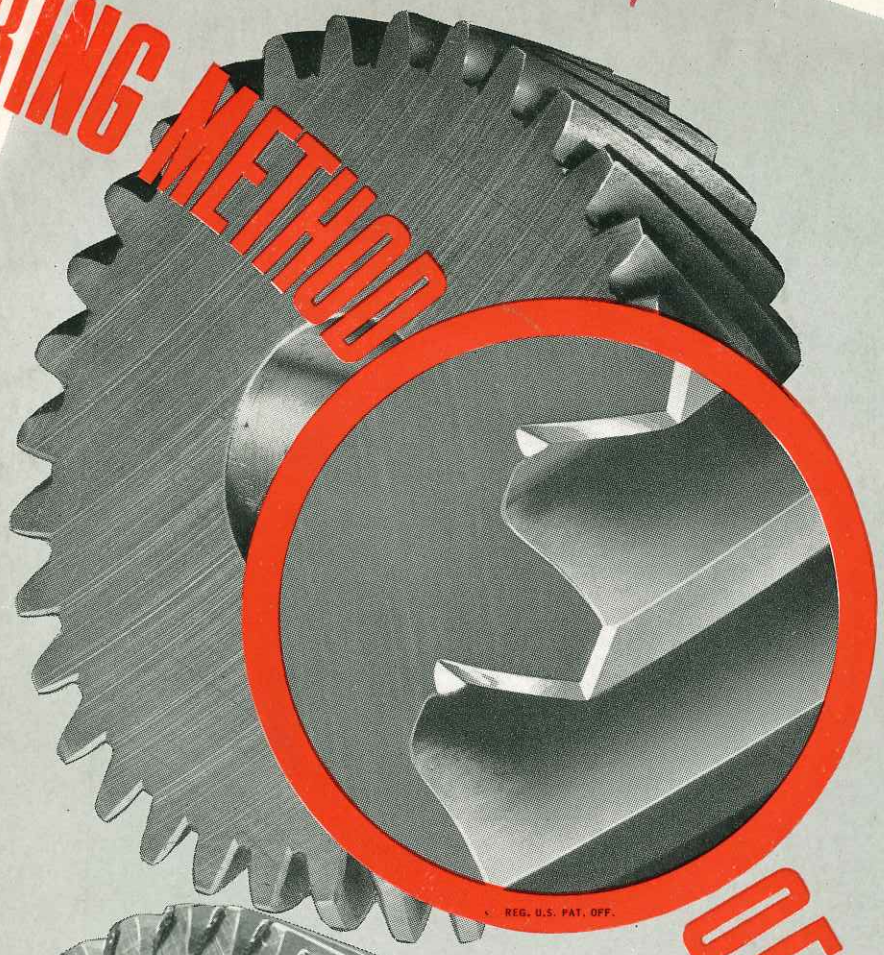
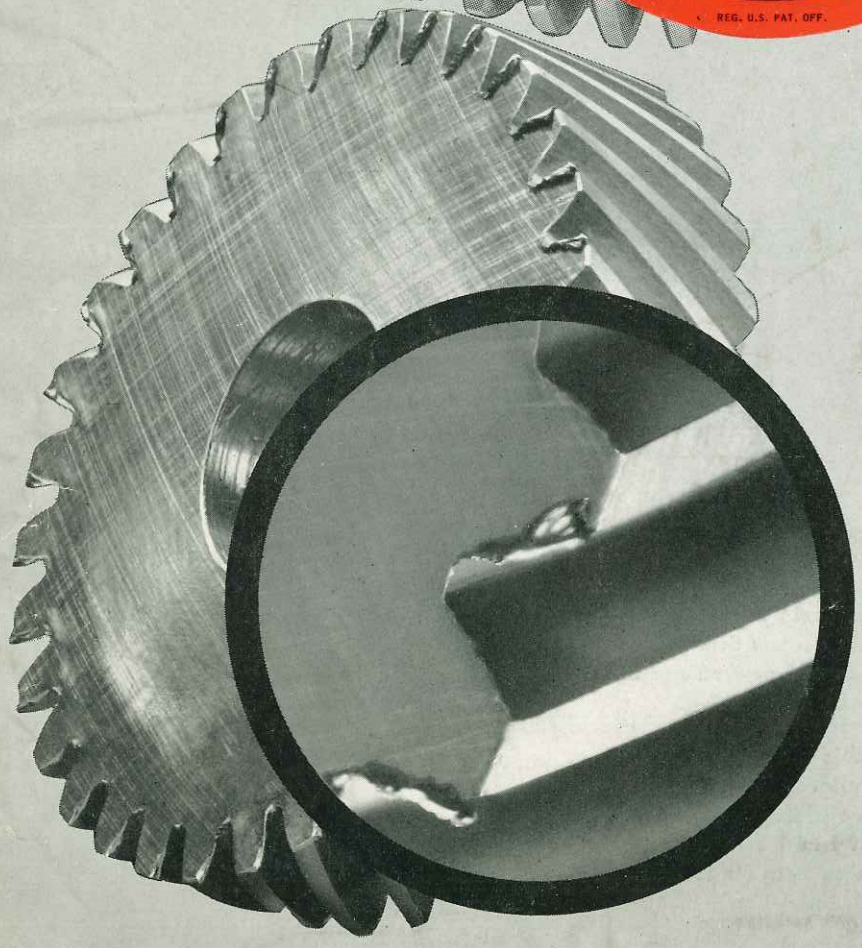
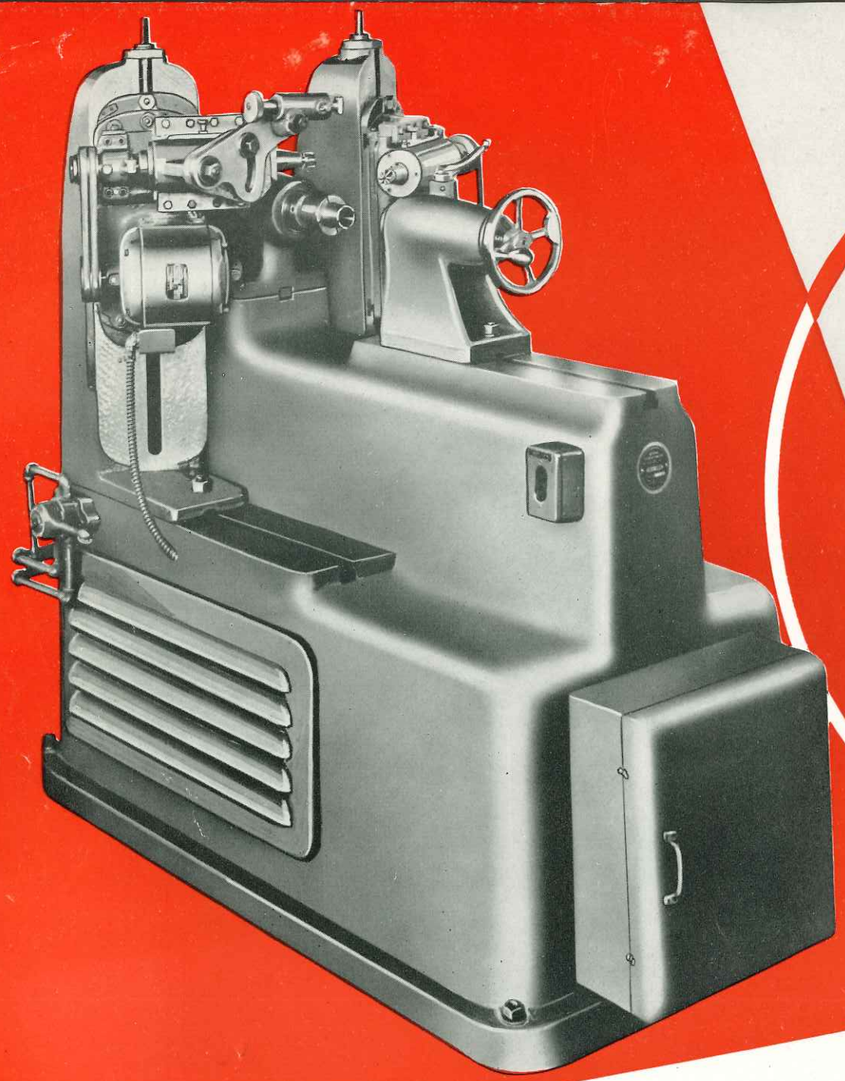
RED RING METHOD



REG. U.S. PAT. OFF.

OF BURRING GEAR TEETH





Patents Pending

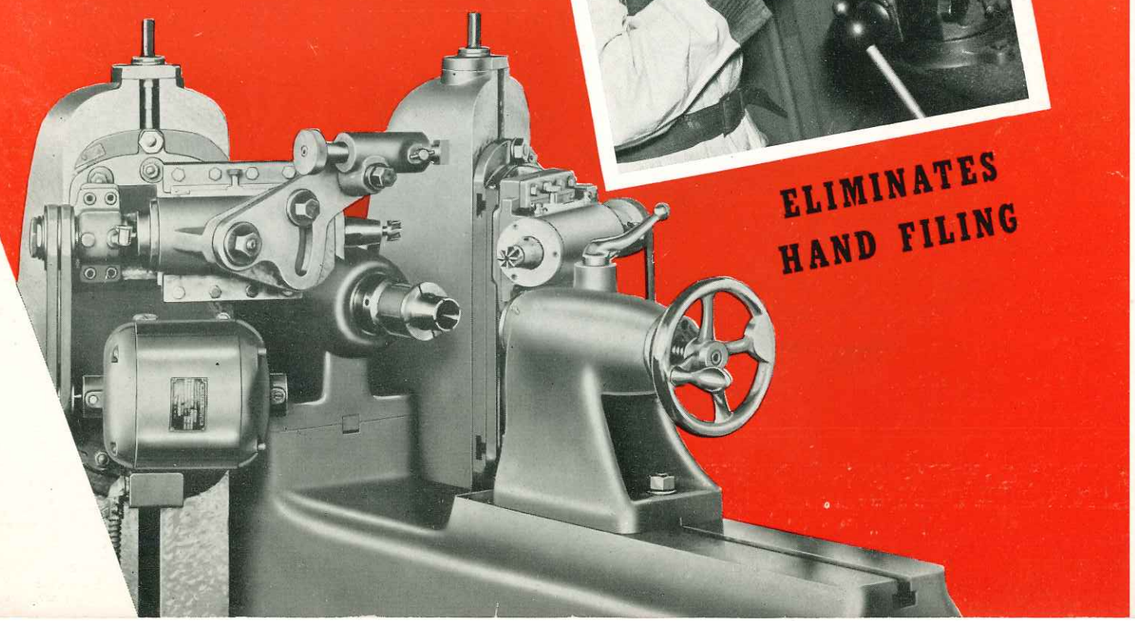
Save

TIME AND PRODUCTION COSTS ON GEARS

The new Red Ring Gear Tooth Burring Machine offers gear manufacturers better, safer and more economical means of processing both spur and helical gears. Burring the edges of gear teeth is essential for gears having a high helix angle in order to safeguard them against breakage in service. It is necessary on all transmission gears, and very desirable on many gears used in machine tools.

The Red Ring Burring Machine incorporates two opposed cutter heads which work simultaneously on the ends of opposite teeth. By indexing the work gear through 180° all teeth are burred in a minimum of time. The cycle is fully automatic, actuated by Microflex Timing and is under positive push button control.

ELIMINATES HAND FILING



CAPACITY AND SPEED

Any single spur or helical gear having a minimum of 13 teeth and an outside diameter not exceeding 14″ may be handled on this machine —likewise any cluster gears within these limits whose length between centers does not exceed 18″. Gears having an odd or even number of teeth may be handled.

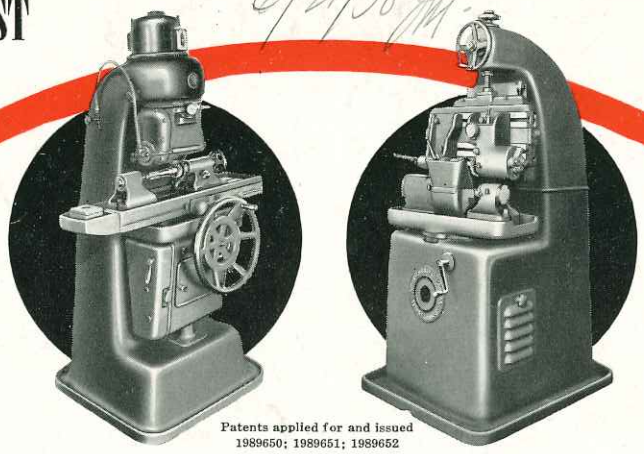
Operating speed of this machine is 80 strokes, or 160 teeth per minute. One stroke accounts for two teeth, because of the two cutter heads. In comparison with hand burring, one Red Ring Machine replaces from six to seven men on the bench, and incidentally does a far better quality of work.

SET-UP AND ADJUSTMENTS

Cutter heads may be swiveled to any necessary angle in accommodating the helix angle of the work gear. Spindles are adjustable forward and backward longitudinally to allow for a full range of cutter regrinding. Also the location of the work can be varied to permit removal of any amount of stock desired. All adjustable parts are provided with Verniers to facilitate recording all setup data. Once the setting has been obtained for any individual job it may later be repeated with a minimum of effort in setup.

Change-over from one job to another requires usually between 10 and 15 minutes. Indexing for the new job requires only a master gear having the same number of teeth as the new work gear.

RED RING GEAR FINISHING MACHINE PRODUCES GEARS OF *Uniform* ACCURACY . . . AT LOW COST



Patents applied for and issued
1989650; 1989651; 1989652

This machine employs limited crossed axis shaving at high speed. The cutter is a helical gear with gashed cutting teeth. Fast cuts at slow feed, similar to fly cutter work, leave teeth of work gear bright and smooth. Action is *cutting*, not burnishing—no metal is compressed to rebound in heat treatment. A 20-tooth helical gear, 9.25 pitch, is finished in 20 to 40 seconds, floor to floor—profile, index, eccentricity, and helix angle all corrected to high precision.

RED RING LAPPING . . . ASSURES STRONGER *Quieter* GEARS . . . AT LESS COST

Red Ring Lapping, with the new GLF Hydraulic Control Machine, extends the scope of lapping to include errors which formerly had to be corrected by grinding. Lapping time of one to five minutes will correct errors of spiral angle, eccentricity, involute curvature, and tooth spacing, up to .002" or even more. Similar corrections by grinding would require 20 to 30 minutes with attendant increase in cost.

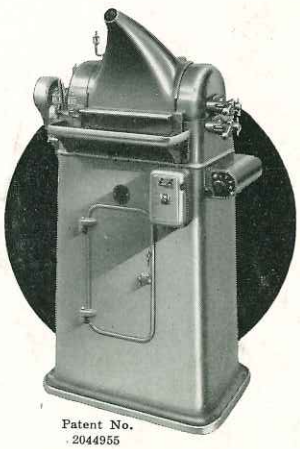
Low Cost HIGH PRECISION GEAR CHECKING RED RING UNIVERSAL GEAR TESTER

Patent No.
2026784

Index—interference—helix angle and wobble—eccentricity and tooth size—are quickly and accurately checked on the Red Ring Universal Gear Tester.

Set-up is simple and rapid. Errors are read quickly and the cost of inspection held to a minimum. Testing an ordinary small gear can be accomplished in less than a minute — laboratory accuracy at production speeds. Write for further details.

SOUND TEST YOUR GEARS *Before* ASSEMBLY . . . RED RING GEAR SPEEDER



Patent No.
2044955

The sum of small errors—each of which may pass inspection—will often make gears noisy in the final assembly.

Cost and annoyance of tearing down these noisy assemblies may be avoided by use of the Red Ring Gear Speeder. This amplifies gear noise 50 times, detecting noisy gears at once. No special sound testing room is needed. The Red Ring Gear Speeder may be located anywhere in the shop.

NATIONAL BROACH & MACHINE COMPANY

SHOEMAKER & ST. JEAN DETROIT, MICHIGAN

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